UNIT 8:
SUBSTANTIAL IMPROVEMENT AND SUBSTANTIAL DAMAGE

In this unit

This unit covers:

- The substantial improvement rule – how to regulate major additions and other improvements to buildings in the floodplain.
- The substantial damage rule – how to regulate reconstruction and repairs to buildings that have been severely damaged.
- Exceptions to the basic rule for some special cases.

Contents

Introduction 8-3
A. Substantial Improvement 8-4
Projects affected 8-4
Post-FIRM buildings 8-5
The formula 8-5
Market value 8-6
Substantial improvement examples 8-9
Example 1. Minor rehabilitation 8-9
Example 2. Substantial rehabilitation 8-10
Example 3. Lateral addition—residential 8-11
Example 4. Lateral addition—nonresidential 8-12
Example 5. Vertical addition—residential 8-13
Example 6. Vertical addition—nonresidential 8-14
Example 7. Post-FIRM building—minor addition 8-15
Example 8. Post-FIRM building—substantial improvement 8-16
Learning Check #1 8-17
B. Substantial Damage 8-18
Cost to repair 8-18
Substantial damage examples 8-20
Example 1. Reconstruction of a destroyed building 8-20
Example 2. Substantially damaged structure 8-21
Substantial Damage Software 8-22
Increased Cost of Compliance 8-22
C. Exceptions 8-25
Exempt activities 8-25
Historic structures 8-25
Code violations 8-26
Example 8-27
Learning Check #2 8-28
Unit learning exercise 8-29
Answers to the learning checks 8-31
Learning check #1 8-31
Learning check #2 8-33
Unit Learning Exercise 8-34

INTRODUCTION

In previous units we focused on the rules and regulations that prevent or reduce damage from floods to new buildings. But what happens when the owner wishes to make an improvement, such as an addition, to an existing building? What if a building is damaged by a fire, flood or other cause?

Basic rule: If the cost of improvements or the cost to repair the damage exceeds 50 percent of the market value of the building, it must be brought up to current floodplain management standards.

That means an existing building must meet the requirements for new construction.

People who own existing buildings that are being substantially improved will be required to make a major investment in them in order to bring them into compliance with the law. They will not be happy. If the buildings have just been damaged, they will be financially strapped and your elected officials will want to help them, not make life harder for them.

For these reasons, it is easy to see that this basic rule can be difficult to administer. It is also the one time when your regulatory program can reduce flood damage to existing buildings. That's why this course devotes this unit to administering the substantial improvements and substantial damage regulations.

In this course, the term "building" is the same as the term "structure" in the NFIP regulations. Your ordinance may use either term. The terms are reviewed in more detail in Unit 5, Section E.

A. SUBSTANTIAL IMPROVEMENT

> ***44 CFR 59.1.*** *Definitions: "Substantial improvement" means any reconstruction, rehabilitation, addition or other improvement to a structure, the total cost of which equals or exceeds 50 percent of the market value of the structure before the start of construction of the improvement.*

This section addresses many clarifications and a few exceptions related to substantial improvements.

PROJECTS AFFECTED

All building improvement projects worthy of a permit must be considered. These include:

- Remodeling projects.
- Rehabilitation projects.
- Building additions.
- Repair and reconstruction projects (these are addressed in more detail in Section B on substantial damage)

If your community does not require permits for, say, reroofing, minor maintenance or projects under a certain dollar amount, then such projects are not subject to the substantial improvement requirements. However, if you have a larger project that includes reroofing, etc., then it must include the entire cost of the project.

One problem you may face is a builder trying to sneak through a loophole by applying for a permit for only part of the job and then later applying for another permit to finish the work. If both applications are together worth more than 50% of the value of the building, the combined project should be considered a substantial improvement and subject to the rules.

FEMA requires that the entire improvement project be counted as one. In order to help you enforce this, you may want to count all applications submitted over, say, one year as one project. Check with your attorney on whether your ordinance clearly gives you the authority to do this and be sure to spell it out in the permit papers given to the applicant.

Some communities require that improvements be calculated cumulatively over several years. All improvement and repair projects undertaken over a period of five years, 10 years or the life of the structure are added up. When they total 50 percent, the building must be brought into compliance as if it were new construction.

The Community Rating System credits keeping track of improvements to enforce a cumulative substantial improvement requirement. It also credits using a lower threshold than 50 percent. These credits are found under Activity 430, Section 431.c and d in the *CRS Coordinator's Manual* and the *CRS Application*. See also *CRS Credit for Higher Regulatory Standards* for example regulatory language.

Post-FIRM buildings

The rules do not address only pre-FIRM buildings—they cover *all* buildings, post-FIRM ones included.

In most cases, a post-FIRM building will be properly elevated or otherwise compliant with regulations for new construction. However, sometimes a map change results in a higher BFE or change in FIRM zone. A substantial improvement to a post-FIRM building may require that the building be elevated to protect it from the new, higher, regulatory BFE.

It should be remembered that all additions to a post-FIRM building must be elevated at least as high as the BFE in effect when the building was built. (You can't allow a compliant building to become noncompliant by allowing additions at grade.) If a new, higher BFE has been adopted since the building was built, additions that are substantial improvements must be elevated to the new BFE.

THE FORMULA

A project is a substantial improvement if:

$$\frac{\text{Cost of improvement project}}{\text{Market value of the building}} \geq 50 \text{ percent}$$

For example, if a proposed improvement project will cost $30,000 and the value of the building is $50,000:

$$\frac{\$30{,}000}{\$50{,}000} = 0.6 \text{ (60 percent)}$$

The cost of the project exceeds 50 percent of the building's value, so it is a substantial improvement. The floodplain regulations for new construction apply and the building must meet the post-FIRM construction requirements. If the project is an addition, only the addition has to be elevated (see the examples later in this section).

The formula is based on the cost of the project and the value of the building. These two numbers must be reviewed in detail.

Project cost

The cost of the project means all structural costs, including

- all materials
- labor
- built-in appliances
- overhead
- profit
- repairs made to damaged parts of the building worked on at the same time

A more detailed list is included in Figure 8-1.

To determine substantial improvement, you need a detailed cost estimate for the project, prepared by a licensed general contractor, professional construction estimator or your office.

Your office must review the estimate submitted by the permit applicant. To verify it, you can use your professional judgment and knowledge of local and regional construction costs, or you can use building code valuation tables published by the major building code groups. These tables can be used for determining estimates for particular replacement items if the type of structure in question is listed in the tables.

There are two exemptions to calculating the cost of an improvement or repair project: 1) improvements to correct code violations and 2) historic buildings. These are explained in more detail later on.

Market value

In common parlance, market value is the price a willing buyer and seller agree upon. The market value of a structure reflects its original quality, subsequent improvements, physical age of building components and current condition.

However, market value for property can be different than that of the building itself. Market value of developed property varies widely due to the desirability of its location. For example, two houses of similar size, quality and condition will have far different prices if one is on the coast, or in the best school district, or closer to town than the other—but the value of the building materials and labor that went into both houses will be nearly the same.

For the purposes of determining substantial improvement, market value pertains only to the structure in question. It does not pertain to the land, landscaping or detached accessory structures on the property. Any value resulting from the location of the property should be attributed to the value of the land, not the building.

Items to be included

- All structural elements, including:
  - Spread or continuous foundation footings and pilings
  - Monolithic or other types of concrete slabs
  - Bearing walls, tie beams and trusses
  - Floors and ceilings
  - Attached decks and porches
  - Interior partition walls
  - Exterior wall finishes (brick, stucco, siding) including painting and moldings
  - Windows and doors
  - Reshingling or retiling a roof
  - Hardware
- All interior finishing elements, including:
  - Tiling, linoleum, stone, or carpet over subflooring
  - Bathroom tiling and fixtures
  - Wall finishes (drywall, painting, stucco, plaster, paneling, marble, etc.)
  - Kitchen, utility and bathroom cabinets
  - Built-in bookcases, cabinets, and furniture
  - Hardware
- All utility and service equipment, including:
  - HVAC equipment
  - Plumbing and electrical services
  - Light fixtures and ceiling fans
  - Security systems
  - Built-in kitchen appliances
  - Central vacuum systems
  - Water filtration, conditioning, or recirculation systems
- Cost to demolish storm-damaged building components
- Labor and other costs associated with moving or altering undamaged building components to accommodate improvements or additions
- Overhead and profits

Items to be excluded

- Plans and specifications
- Survey costs
- Permit fees
- Post-storm debris removal and clean up
- Outside improvements, including:
  - Landscaping
  - Sidewalks
  - Fences
  - Yard lights
  - Swimming pools
  - Screened pool enclosures
  - Detached structures (including garages, sheds and gazebos)
  - Landscape irrigation systems

Figure 8-1. Items included in calculating cost of the project

Acceptable estimates of market value can be obtained from these sources:

- An independent appraisal by a professional appraiser. The appraisal must exclude the value of the land and not use the "income capitalization approach" which bases value on the use of the property, not the structure.
- Detailed estimates of the structure's actual cash value—the replacement cost for a building, minus a depreciation percentage based on age and condition. For most situations, the building's actual cash value should approximate its market value. Your community may prefer to use actual cash value as a substitute for market value, especially where there is not sufficient data or enough comparable sales.
- Property appraisals used for tax assessment purposes with an adjustment recommended by the tax appraiser to reflect market conditions (adjusted assessed value).
- The value of buildings taken from NFIP claims data (usually actual cash value).
- Qualified estimates based on sound professional judgment made by the staff of the local building department or tax assessor's office.

Some market value estimates are often used only as screening tools (i.e., NFIP claims data and property appraisals for tax assessment purposes) to identify those structures where the substantial improvement ratios are obviously less than or greater than 50 percent (i.e., less than 40 percent or greater than 60 percent). For structures that fall in the 40 percent to 60 percent range, more precise market value estimates are sometimes necessary.

SUBSTANTIAL IMPROVEMENT EXAMPLES

Example 1. Minor rehabilitation

A rehabilitation is defined as an improvement made to an existing structure which does not affect the external dimensions of the structure.

If the cost of the rehabilitation is less than 50 percent of the structure's market value, the building does not have to be elevated or otherwise protected. However, it is advisable to incorporate methods to reduce flood damage, such as use of flood-resistant materials and installation of electrical, heating and air conditioning units above the BFE.

Figure 8-2 shows a building that had a small rehabilitation project. Central air conditioning was installed and the electrical system was upgraded. The value of the building before the project was $60,000. The value of the project was $12,000:

$12,000 = 0.2 (20 percent) The project costs less than 50 percent of the $60,000 building, so this is not a substantial improvement.

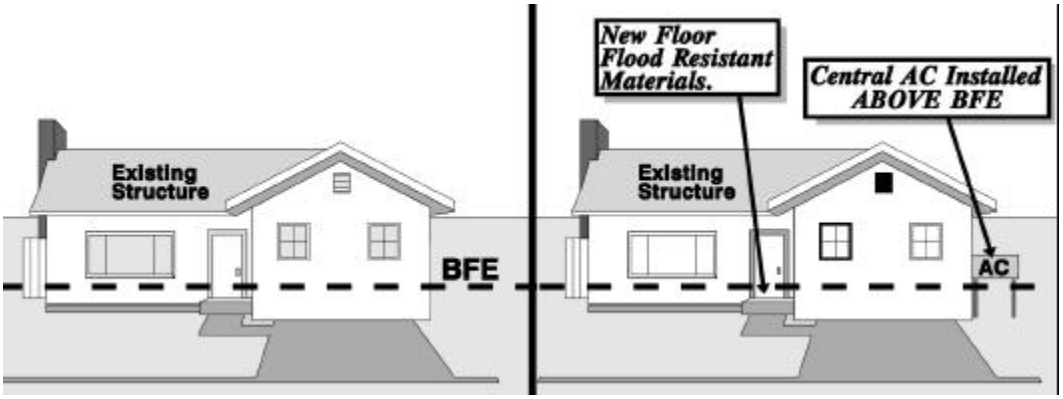


Figure 8-2. Minor rehabilitations use flood-resistant methods and materials. Neither structure would benefit from post-FIRM flood insurance rates because they are not elevated.

Note: To gauge what happens to flood insurance premiums if a substantially improved building is not brought up to post-FIRM standards, see Figures 7-7 through 7-12.

Example 2. Substantial rehabilitation

If the rehab costs more than 50 percent of the value of the building, your ordinance requires that an existing structure be elevated and/or the basement filled to meet the elevation standard.

Figure 8-3 shows a building that has been allowed to run down. It's market value is $35,000. To rehab it will require gutting the interior and replacing all wallboard, built-in cabinets, bathroom fixtures and furnace. The interior doors and flooring will be repaired. The house will get new siding and a new roof. The cost of this rehab will be $25,000:

$\frac{\$25,000}{\$35,000} = 71.4$ percent Because total cost of the project is greater than 50 %the rehab is a substantial improvement

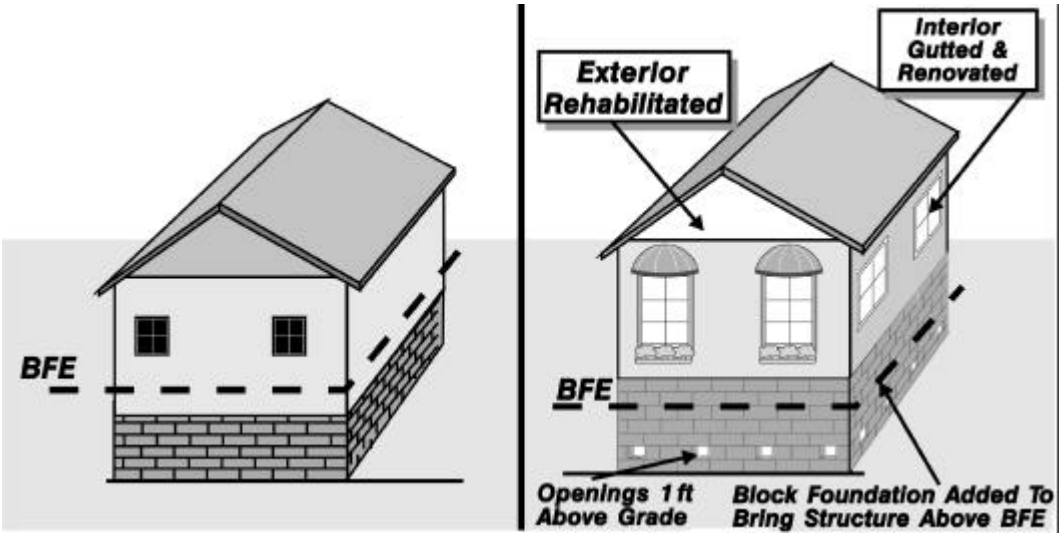


Figure 8-3. substantially rehabilitated building elevated above the BFE.
In A Zones, elevation may be on fill, crawlspace, columns, etc. In V Zones, only pilings, columns or other open foundations are allowed. The new structure would benefit from post-FIRM flood insurance rates.

Example 3. Lateral addition—residential

Additions are improvements that increase the square footage of a structure. Commonly, this includes the structural attachment of a bedroom, den, recreational room garage or other type of addition to an existing structure.

When an addition is a substantial improvement, the addition must be elevated or floodproofed, providing that improvements to the *existing* structure are minimal. Figures 8-4 and 8-5 illustrate lateral additions that are compliant.

Depending on the flood zone and details of the project, the existing building may not have to be elevated. The determining factors are the common wall and what improvements are made to the existing structure. If the common wall is demolished as part of the project, then the entire structure must be elevated. If only a doorway is knocked through it and only minimal finishing is done, then only the addition has to be elevated.

In A Zones only, if significant improvements are made to the existing structure (such as a kitchen makeover), both it and the addition must be elevated and otherwise brought into compliance. Some states and many communities require that both the existing structure and lateral additions be elevated in all cases.

In V Zones, the existing structure always has to be elevated, placed on an engineered foundation system, etc., when an addition is proposed that constitutes a substantial improvement. This is due to the "free-of obstruction" standard whereby the lower existing structure would obstruct the storm surge, causing damage to the addition.

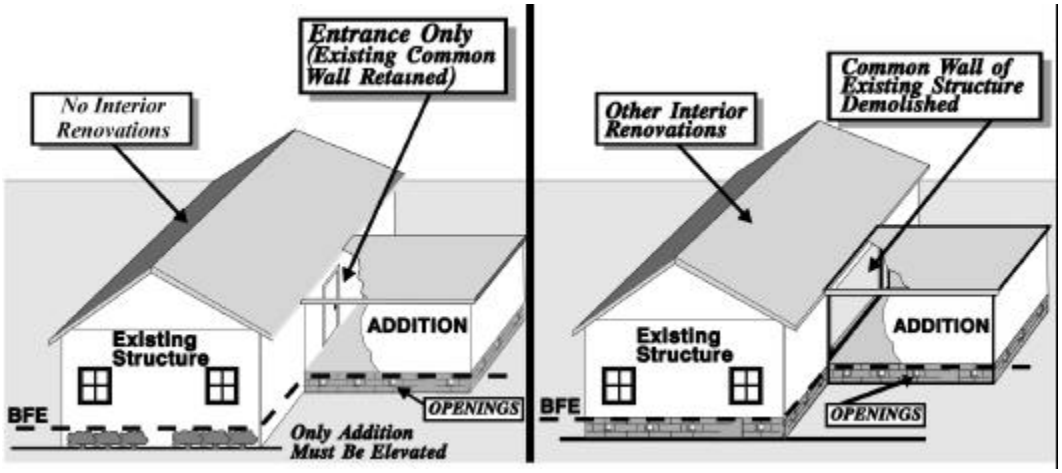


Figure 8-4. Lateral additions to a residential building in an A Zone.
In V Zones, the entire building must be elevated on pilings, columns or other open foundations. The structure on the left would not benefit from post-FIRM flood insurance rates because it was not elevated.

Example 4. Lateral addition—nonresidential

A substantial improvement addition to a nonresidential building may be either elevated or floodproofed. Otherwise, all the criteria for residential buildings reviewed in Example 3 must be met.

If floodproofing is used, the builder must ensure that the wall between the addition and the original building is floodproofed. Floodproofing is not allowed as a construction measure in V Zones.

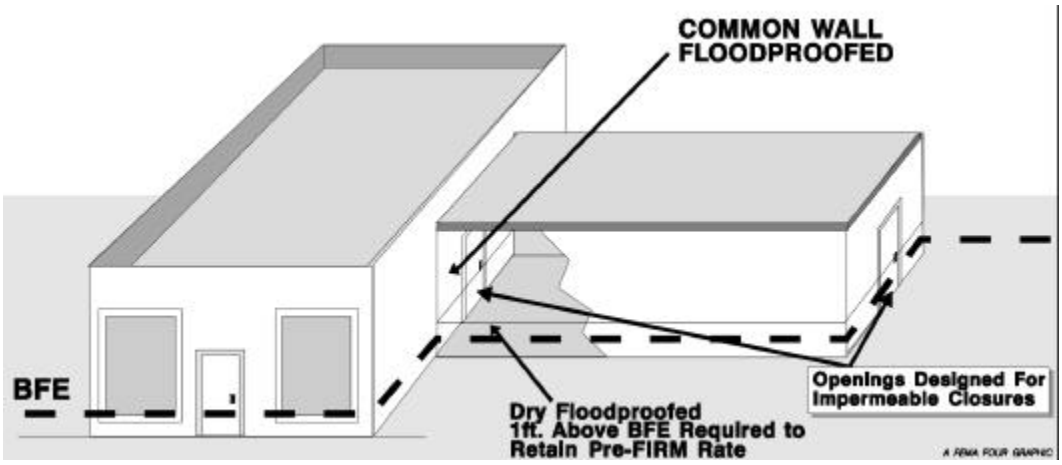


Figure 8-5. Lateral addition to a nonresidential building in an A Zone.
This approach is not allowed in V Zones. The structure would *not* benefit from post-FIRM flood insurance rates because the original building was not elevated or floodproofed.

Example 5. Vertical addition—residential

When the proposed substantial improvement is a full or partial second floor, the entire structure must be elevated (Figure 8-6). In this instance, the existing building provides the foundation for the addition. Failure of the existing building would result in failure of the addition, too.

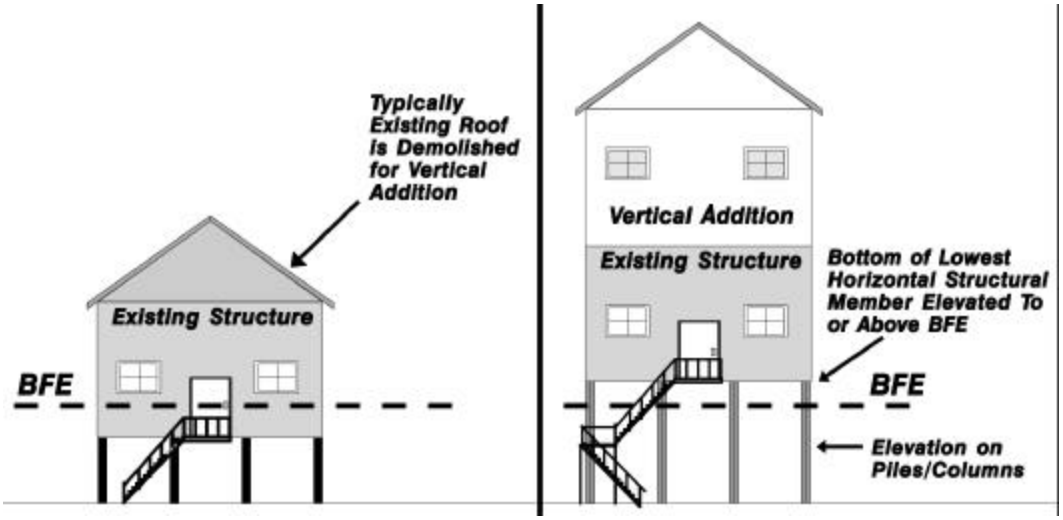


Figure 8-6. Vertical addition to a residential building in a V Zone.
The new structure would benefit from post-FIRM flood insurance rates.

Example 6. Vertical addition—nonresidential

When the proposed substantial improvement is a full or partial second floor, the entire structure must be elevated or floodproofed (Figure 8-7).

The owner could obtain post-FIRM rates on the building if it is floodproofed to one foot above the BFE and he has a floodproofing certificate signed by a registered engineer. An optional approach is to elevate the entire building and obtain an elevation certificate.

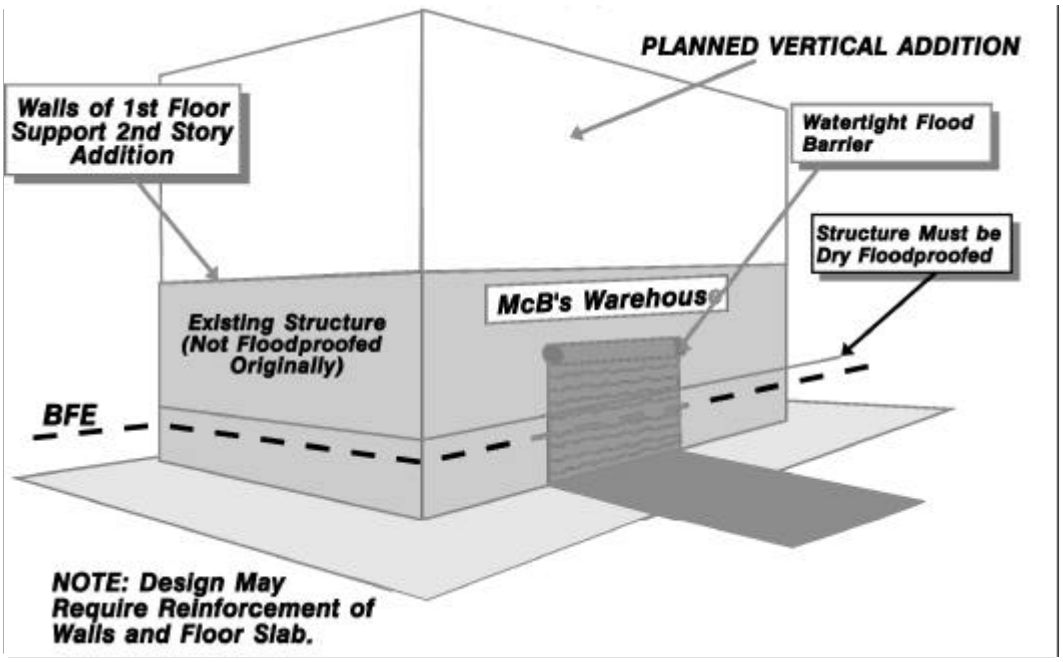

PLANNED VERTICAL ADDITION
Walls of 1st Floor Support 2nd Story Addition
Watertight Flood Barrier
Structure Must be Dry Floodproofed
McB's Warehouse
Existing Structure (Not Floodproofed Originally)
BFE
NOTE: Design May Require Reinforcement of Walls and Floor Slab.

Figure 8-7. Vertical addition to a nonresidential building in an A Zone.
The new floodproofed structure would benefit from post-FIRM flood insurance rates.

Example 7. Post-FIRM building—minor addition

ALL additions to post-FIRM buildings are defined as new construction and must meet the requirements of your floodplain management ordinance regardless of the size or cost of the addition (Figure 8-8). A small addition to a residential structure must be elevated at least as high as the BFE in effect when the building was built.

If a map revision has taken place and the BFE has increased, only additions that are substantial improvements have to be elevated to the new BFE.

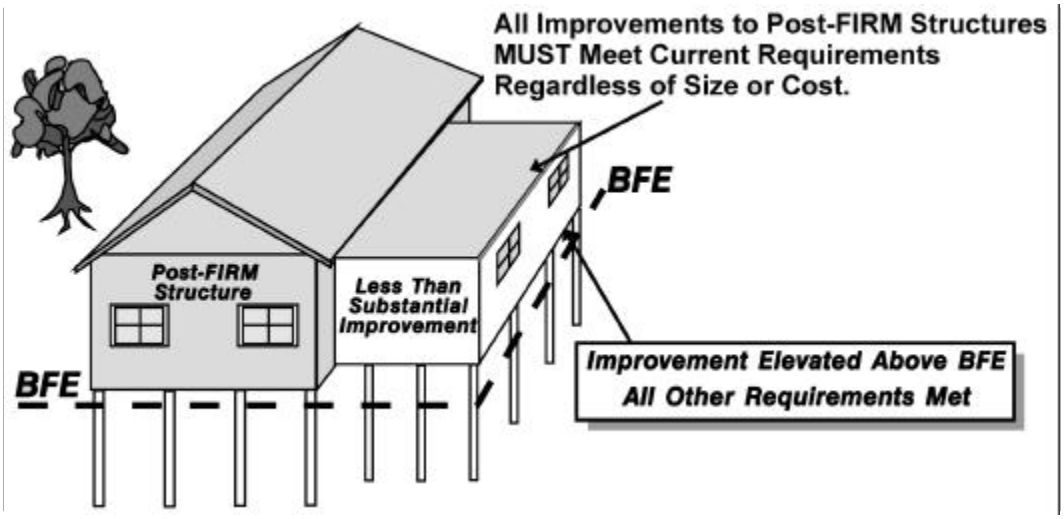


Figure 8-8. Small additions to post-FIRM buildings must be elevated.

Example 8. Post-FIRM building—substantial improvement

Substantial improvements made to a post-FIRM structure must meet the requirements of the current ordinance. Figure 8-9 shows a lateral addition made after a map revision took place and the BFE was increased.

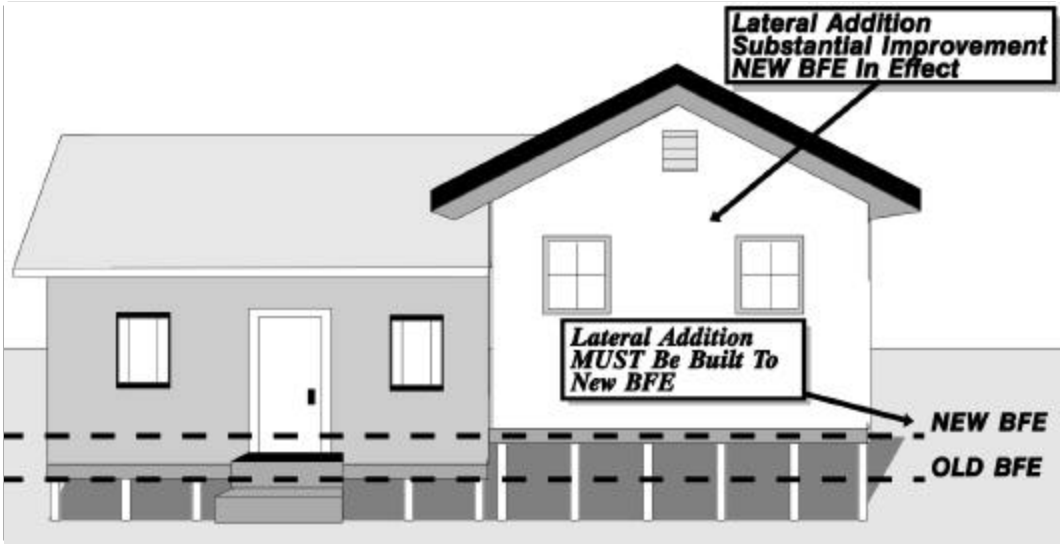


Figure 8-9. Substantial improvements to post-FIRM buildings must be elevated above the new BFE. Nonresidential buildings may be floodproofed

LEARNING CHECK #1

1. What is the basic rule on improvements and repairs to existing buildings in the floodplain?

2. Mrs. Murphy got a permit two months ago to remodel her living room and kitchen. Now she wants a permit to remodel three bedrooms and two bathrooms. Should you check each of these separately to determine if each project is a substantial improvement?

3. What is the substantial improvement formula?

4. Which of the following items must be included when calculating the cost of an improvement project?
   - — Attached deck
   - — Plumbing
   - — Permit fees
   - — Contractor's overhead and profit
   - — Architect's plans
   - — Landscaping
   - — Built-in bookcases
5. What factors are considered when determining market value?

6. What are three good sources for obtaining the market value of a house?

7. Mr. Jones proposes a $50,000 addition to his $80,000 home in the floodplain. Is this a substantial improvement?

8. If Mr. Jones' project will be a substantial improvement, what do you need to check to see if the whole house has to be elevated or just the addition?

B. SUBSTANTIAL DAMAGE

> ***44 CFR 59.1.*** *Definitions: "Substantial damage" means damage of any origin sustained by a structure whereby the cost of restoring the structure to its before damaged condition would equal or exceed 50 percent of the market value of the structure before the damage occurred.*

Two key points:

- The damage can be from any cause—flood, fire, earthquake, wind, rain, or other natural or human-induced hazard.
- The substantial damage rule applies to all buildings in a flood hazard area, regardless of whether the building was covered by flood insurance.

The formula is essentially the same as for substantial improvements:

$$\frac{\text{Cost to repair}}{\text{Market value of the building}} \geq 50 \text{ percent}$$

Market value is calculated in the same way as for substantial improvements. Use the pre-damage market value.

COST TO REPAIR

Notice that the formula uses "cost *to* repair," not "cost *of* repairs." The cost to repair the structure must be calculated for full repair to the building's before-damage condition, even if the owner elects to do less. It must also include the cost of any improvements that the owner has opted to include during the repair project.

The total cost to repair includes the same items listed in Figure 8-1. As shown in Example 2 below, properly repairing a flooded building can be more expensive than people realize. The owner may opt not to pay for all of the items needed. The owner may:

- Do some of the work, such as removing and discarding wallboard.
- Obtain some of the materials free.
- Have a volunteer organization, such as the Mennonites, do some of the work.
- Decide not to do some repairs, such as choosing to nail down warped flooring rather than replace it.

Basic rule: Substantial damage is determined regardless of the actual cost to the owner. You must figure the true cost of bringing the building back to its pre-damage condition using qualified labor and materials obtained at market prices.

The permit office and the owner may have serious disagreements over the total list of needed repairs and their cost, as the owner has a great incentive to show less damage than actually occurred in order to avoid the cost of bringing the building into compliance. Here are four things that can help you:

- Get the cost to repair from an objective third-party or undebatable source, such as:

  -- A licensed general contractor.

  -- A professional construction estimator.

  -- Insurance adjustment papers (exclude damage to contents).

  -- Damage assessment field surveys conducted by building inspection, emergency management or tax assessment agencies after a disaster.

  -- Your office.

  Even if your office does not prepare the cost estimate, it needs to review the estimate submitted by the permit applicant. You can use your professional judgment and knowledge of local and regional construction costs. Or, you can use building code valuation tables published by the major building code groups.

- Use an objective system that does not rely on varying estimates of market value or different opinions of what needs to be repaired. The Substantial Damage Estimator Program discussed later in this section will do this.

- Publicize the need for the regulations and the benefits of protecting buildings from future flooding. A well-educated public won't argue as much as one that sees no need for the requirement.

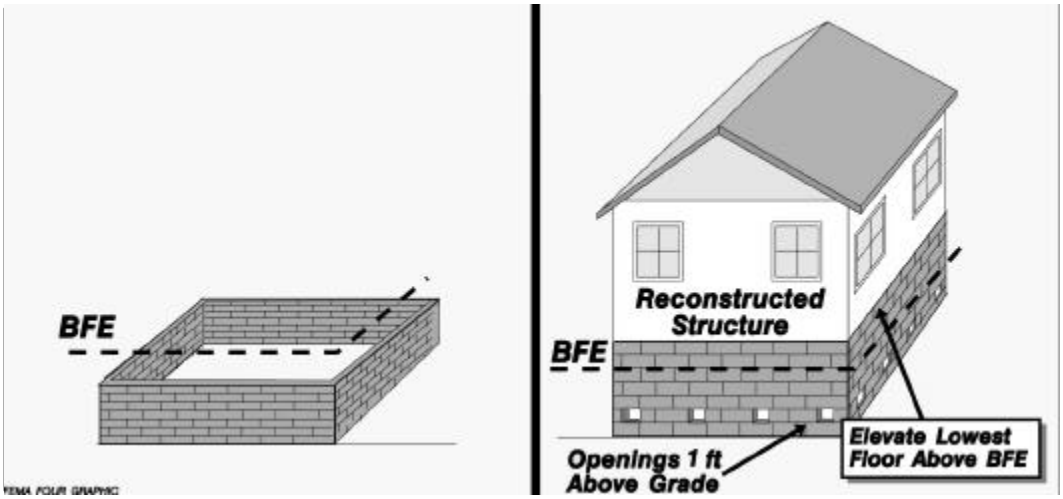
- Help the owner find financial assistance to meet the extra cost of complying with the code. If there was a disaster declaration, there may be sources of financial assistance as discussed in the next unit. If the owner had flood insurance and the building was substantially damaged by a flood, the new Increased Cost of Compliance coverage will help (see next section).

SUBSTANTIAL DAMAGE EXAMPLES

Example 1. Reconstruction of a destroyed building

Reconstructions are cases where an entire structure is destroyed, damaged, purposefully demolished or razed, and a new structure is built on the old foundation or slab. The term also applies when an existing structure is moved to a new site.

Reconstructions are, quite simply, "new construction." They must be treated as new buildings.



Razed or "totaled" building with remaining foundation

Reconstruction on existing foundation

Figure 8-10. A reconstructed house is new construction.
This example is for A Zones only. A new building in the V Zone must be elevated on piles or columns.

Example 2. Substantially damaged structure

To determine if a damaged structure meets the threshold for substantial damage, the cost of repairing the structure to its before-damaged condition is compared to the market value of the structure prior to the damage. The estimated cost of the repairs must include all costs necessary to fully repair the structure to its before-damaged condition.

If equal to or greater than 50 percent of that structure's market value before damage, then the structure must be elevated (or floodproofed if it is nonresidential) to or above the level of the base flood, and meet other applicable local ordinance requirements. This is the basic requirement for substantial damage.

Figure 8-11 graphically illustrates the amount of damage that can occur to a building flooded only four feet deep. Even though the structure appears sound and there are no cracks or breaks in the foundation, the total cost of repair can be significant.

The cost of repair after a flood that simply soaked the building will typically include the following structural items:

- Remove all wallboard and insulation.
- Install new wallboard and insulation.
- Tape and paint.
- Remove carpeting and vinyl flooring.
- Dry floor, replace warped flooring.
- Replace cabinets in the kitchen and bathroom.
- Replace built-in appliances.
- Replace hollow-core interior doors.
- Replace furnace and water heater.
- Clean and disinfect duct work.
- Repair porch flooring and front steps.
- Clean and test plumbing (licensed plumber may be required).
- Replace outlets and switches, clean and test wiring (licensed electrician may be required).

Note: See also Figures 7-7 through 7-12 for what happens to flood insurance premiums if a substantially damaged building is granted a variance and is not brought up to post-FIRM standards.

Figure 8-11. Even slow moving floodwater can cause substantial damage.

SUBSTANTIAL DAMAGE SOFTWARE

FEMA has developed a software program to help local officials make substantial damage determinations. The software is Windows-based and will work on Microsoft Windows 3.1 and Windows 95. While it is based on Microsoft Access, the software is self-contained and does not require any software in addition to Windows.

The software comes with a manual, *Guide on Estimating Substantial Damage Using the NFIP Residential Substantial Damage Estimator*, FEMA 311. This includes a user's manual and worksheets that allow the calculations to be done manually.

Contact your FEMA Regional Office for a copy of the software package and help in using it. Following a major disaster declaration, training sessions and technical assistance may be available.

INCREASED COST OF COMPLIANCE

On June 1, 1997, the NFIP began offering additional coverage to all holders of structural flood insurance policies. This coverage is called Increased Cost of Compliance or ICC.

The name refers to cases where the local floodplain management ordinance requires elevation or retrofitting of a substantially damaged building. Under ICC, the flood insurance policy will not only pay for repairs to the flooded building, it will pay up to $15,000 to help cover the additional cost of complying with the ordinance. This is available for any flood insurance claim and, therefore, is not dependent on the community receiving a disaster declaration.

There are some limitations to ICC:

- It's only available if there was a flood insurance policy on the building before the flood.
- It covers only damage caused by a flood.
- Claims are limited to $15,000 per structure.
- Claims must be accompanied by a substantial damage determination by the floodplain ordinance administrator.

It should also be mentioned that a portion of the rest of the claim payment may help meet the cost of bringing the building up to code. For example, if there was foundation damage, the regular claim will pay for the cost of repairing or replacing the foundation. The ICC funds would only be needed for the extra costs of raising the foundation higher than it was before.

In certain cases, an ICC claim can be filed if the building is repetitively flooded, sustaining losses of less than 50 percent of the market value each time and if the total cost of the losses is 50 percent or more during a certain period of time, provided the community has language in the flood damage ordinance that implements the substantial damage rule in these cases.

Figure 8-12 has example ordinance language. This language exceeds the minimum NFIP requirements, but would be needed if you wanted to trigger the ICC provision for repetitively damaged buildings.

The Community Rating System credits keeping track of improvements to enforce a cumulative substantial improvement requirement. The 1999 *CRS Coordinator's Manual* credits the ordinance language in Figure 8-12. These credits are found under Activity 430, Section 431.c in the *CRS Coordinator's Manual* and the *CRS Application.*

Option 1

A. Adopt the Following Definition:

"Repetitive Loss" means flood-related damage sustained by a structure on two separate occasions during a 10-year period for which the cost of repairs at the time of each such flood event, on the average, equals or exceeds 25 percent of the market value of the structure before the damage occurred.

B. And modify the "substantial improvement" definition as follows:

"Substantial Improvement" means any reconstruction, rehabilitation, addition, or other improvement of a structure, the cost of which equals or exceeds 50 percent of the market value of the structure before the "start of construction" of the improvement. This term includes structures which have incurred "repetitive loss" or "substantial damage", regardless of the actual repair work performed.

Option 2

Modify the Asubstantial damage@ definition as follows:

"Substantial Damage" means damage of any origin sustained by a structure whereby the cost of restoring the structure to its before damaged condition would equal or exceed 50 percent of the market value of the structure before the damage occurred. Substantial damage also means flood-related damage sustained by a structure on two separate occasions during a 10-year period for which the cost of repairs at the time of each such flood event, on the average, equals or exceeds 25 percent of the market value of the structure before the damage occurred.

NOTE 1: Communities need to make sure that these definitions are tied to the floodplain management requirements for new construction and substantial improvements and to any other requirements of the ordinance, such as the permit requirements, in order to enforce this provision.

NOTE 2: An ICC Claim Payment is ONLY made for flood-related damage. The substantial damage part of the definition must still include "damage of any origin" to be compliant with the minimum NFIP Floodplain Management Regulations.

Figure 8-12. Sample ordinance language for ICC repetitive loss definitions
Source: *Interim Guidance for State and Local Officials -- Increased Cost of Compliance Coverage*, FEMA, 1997. This language is only needed to trigger an ICC payment for a repetitive loss. No ordinance changes are needed for the ICC coverage for substantial damage.

C. EXCEPTIONS

As explained in previous sections, the substantial improvement and substantial damage requirements affect all buildings regardless of the reason for the improvement or the cause of the damage. There are three exceptions to this: exempt activities, historic buildings and projects required by code.

EXEMPT ACTIVITIES

Certain activities related to making improvements or repairing damaged buildings do not have to be counted toward the cost of the improvement or repairs. These include:

- Plans and specifications.
- Surveying.
- Permit fees.
- Demolition or emergency repairs made for health or safety reasons or to prevent further damage to the building.
- Improvements or repairs to items outside the building, such as the driveway, fencing, landscaping and detached structures.

HISTORIC STRUCTURES

Historic structures are exempted from the substantial improvement requirements subject to the criteria listed below. The exemption can be granted administratively if the current NFIP definitions of substantial improvement and historic structure are included in your ordinance, or they can be granted through a variance procedure.

In either case, they are usually granted subject to conditions.

If the improvements to a historic structure meet the following three criteria and are approved by the community, the building will not have to be elevated or floodproofed. It can also retain its pre-FIRM flood insurance rating status.

1. The building must be a bona-fide "historic structure." Figure 7-13 has the definition that must be followed.

2. The project must maintain the historic status of the structure. If the proposed improvements to the structure will result in it being removed from or ineligible for the National Register or federally-certified state or local inventory, then the proposal cannot be granted an exemption from the substantial improvement rule.

The best way to make such determinations is to seek written review and approval of proposed plans by the local historic preservation board, if it is federally-certified, or by the state historic preservation office. If the plans are approved, you can grant the exemption. If not, no exemption can be permitted.

3. Take all possible flood damage reduction measures. Even though the exemption to the substantial improvement rule means the building does not have to be elevated to or above BFE, or be renovated with flood-resistant materials that are not historically sensitive, many things can and should be done to reduce the flood damage potential. Examples include:

- Locating mechanical and electrical equipment above the BFE or flood-proofing it.
- Elevating the lowest floor of an addition to or above the BFE with the change in floor elevation disguised externally.
- Building the lowest floor of an addition with flood-resistant materials and providing hydrostatic openings.

CODE VIOLATIONS

The NFIP definition of substantial improvement includes another exemption:

> ***44 CFR 59.1 Definitions:*** *"Substantial improvement" means …. The term does not, however, include … Any project for improvement of a structure to correct existing violations of state or local health, sanitary, or safety code specifications which have been identified by the local code enforcement official and which are the minimum necessary to assure safe living conditions*

Note the key words in this exemption: *correct* existing violations, *identified* by the local official, and *minimum* necessary to assure safe conditions. This language was included in order to avoid penalizing property owners *who had no choice* but to make improvements to their buildings or face condemnation or revocation of a business license.

This exemption was intended for *involuntary* improvements or violations that existed before the improvement permit was applied for or before the damage occurred—for example, a restaurant owner who must remodel and enlarge the kitchen in order to meet current local and state health and safety codes.

You can only exempt the items specifically required by code. For example, if a single stair tread was defective and had to be replaced, do not exempt the cost of rebuilding the entire stairway. Similarly, count only replacement in like kind and what is minimally necessary. If the owner chooses to upgrade the quality of a code-required item, the extra cost is not exempt from the formula—it's added to the true cost of the improvement or repairs.

Unfortunately, many property owners and builders pressure local building official to exclude "code violation corrections" from their voluntary improvement proposals. There are "code violations" in all structures built before the current code was enacted. In many cases, those elements must be brought up to code as part of an improvement project.

This is very different from a code violation citation that forces a property owner to correct those violations and make improvements that were otherwise not planned. The building official must know about and document the violations before or at the time the permit is issued.

Example

A small business in a 40-year old building was damaged by a fire. The building's pre-fire market value was $100,000. The insurance adjuster and the permit office concluded that the total cost to repair would be $45,000.

However, the community's building code states that whenever an applicant applies for a permit to modify or improve a building, the building must be brought up to code. This building would need the following additional work:

- Replace unsafe electrical wiring.
- Install missing fire exit signs, smoke detectors and emergency lighting.
- Widen the front door and install a ramp to make the business accessible to handicapped and mobility-impaired people.

The total cost of these code requirements would be $8,000. However, since these were required by the code before the fire occurred, they would not have to be counted toward the cost to repair. Based on the basic formula:

$$\frac{\$45{,}000}{\$100{,}000} = 0.45 \text{ or } 45\%$$

The building is not declared substantially damaged

In this example, the building can be repaired without elevating or floodproofing. However, the permit office should strongly recommend incorporating flood protection measures and flood resistant materials in the repair project (as in the example in Figure 8-2).

LEARNING CHECK #2

1. What is the formula for determining substantial damage?

2. What is the basic rule on calculating the cost of the damage?

3. A tornado swept through town and substantially damaged 25 buildings in the floodplain. How can you help the property owners comply with the floodplain ordinance's substantial damage regulations?

4. Mr. Johnson prepared a list of everything he has to do to repair his flooded home. Which of the following items are counted toward the cost of repairs when determining substantial damage? What is the dollar amount that should be counted?

   — Clearing broken trees and debris away from the house ($2,500)

   — Replacing the warped flooring ($3,000)

   — New doors ($1,000) to replace old ones (worth $500)

   — Replacing the old kitchen cabinets (valued at $5,000) with custom hard-wood cabinets valued at $15,000.

   — New wall to wall carpeting ($1,800)

   — New furniture ($12,000)

   — New wiring ($2,000) to bring the building up to current code (This is a standard requirement of the community. The building was not cited as having a code violation.)

   — Permit fee ($500)

   — Clean out and test the furnace (done free as a public service by the utility company, but otherwise worth $250 if done by a private contractor)

   — New bushes and replacement fence ($1,500)

5. What's the best way to determine if a building is "historic" and eligible for exemption from the substantial improvement requirement?

UNIT LEARNING EXERCISE

1. What kind of projects need a permit so you can check to see if they would be substantial improvements?

2. A home was built to post-FIRM standards in 1990. The lowest floor was elevated four feet above grade, to the BFE in effect at that time. In 1995, a new FIRM went into effect. The new BFE is now six feet above grade at that site.

   a. How high would a small (less than substantial) addition have to be elevated?

   b. How high would a large (substantial) addition have to be elevated?

3. Mrs. Murphy bought her property for $100,000 last year. Is this a good basis for determining its market value?

4. Based on tax assessor's records, the market value of 123 Main Street is $75,000. The owner wants to replace the HVAC and plumbing, remodel the kitchen and both bathrooms and convert his basement to a finished family room. His total cost is $20,000 for supplies. If a contractor were to do the job, the total cost would be $45,000. However, since he is a handyman and will do all the work himself, the total cost of his project is $20,000. What is your response?

5. Mrs. Smith wants a new second story that will double the size and value of her house. The floor of the new story will be above the BFE. Will the old first floor have to be elevated?

6. The substantial damage regulations only apply if the building was damaged by a flood. True or false?

7. A flooded property owner has a brother who is a plumbing contractor. His brother's repair estimate shows the damage at 48% of the building's value. You think it should be higher. What can you do to prevent an argument over who's numbers are right?

8. Mrs. McGillicudy is on a fixed income. Her home was flooded and substantially damaged. Her flood insurance policy will pay for the repairs. When told that she will also have to elevate her house, she thinks she should apply for a variance due to the financial hardship. What do you tell her?

9. Before the flood, Mr. Johnson had been cited by the community for a code violation. The paint on his garage door had been peeling, which was a violation of the local housing maintenance code. Since the flood left mud up to the high water line, he decided to repaint the whole house. Can he claim exemption of the cost of the painting because it had been cited as a code violation?

ANSWERS TO THE LEARNING CHECKS

Learning check #1

1. What is the basic rule on improvements and repairs to existing buildings in the floodplain?

   If the cost of improvements or the cost to repair the damage exceeds 50 percent of the market value of the building, it must be brought up to current floodplain management standards.

2. Mrs. Murphy got a permit two months ago to remodel her living room and kitchen. Now she wants a permit to remodel three bedrooms and two bathrooms. Should you check each of these separately to determine if each project is a substantial improvement?

   No. They should be counted as one project and their total cost combined.

3. What is the substantial improvement formula?

   A project is a substantial improvement if:

   $$\frac{\text{Cost of improvement project}}{\text{Market value of the building}} \geq 50 \text{ percent}$$

4. Which of the following items must be included when calculating the cost of an improvement project?

   — Attached deck *yes*

   — Plumbing *yes*

   — Permit fees *no*

   — Contractor's overhead and profit *yes*

   — Architect's plans *no*

   — Landscaping *no*

   — Built-in bookcases *yes*

5. What factors are considered when determining market value?

   "The price a willing buyer and seller agree upon." Factors to consider are the building's original quality, subsequent improvements, age and current condition.

6. What are three good sources for obtaining the market value of a house?

   — *An independent appraisal by a professional appraiser.*

   — *Detailed estimates of the structure's actual cash value (the replacement cost for a building, minus a depreciation percentage based on age and condition).*

— *Property appraisals used for tax assessment purposes with an adjustment recommended by the tax appraiser to reflect market conditions (adjusted assessed value).*

— *The value of buildings taken from NFIP claims data (usually actual cash value).*

— *Qualified estimates based on sound professional judgment made by the staff of the local building department or tax assessor's office.*

7. Mr. Jones proposes a $50,000 addition to his $80,000 home in the floodplain. Is this a substantial improvement?

   Yes, 50,000 divided by 80,000 = 0.625, more than 50%

8. If Mr. Jones' project will be a substantial improvement, what do you need to check to see if the whole house has to be elevated or just the addition?

   Check the extent of work on the common wall and the existing building. If the common wall is demolished as part of the project, the existing building and the addition must be elevated.

Learning check #2

1. What is the formula for determining substantial damage?

   A building was substantially damaged if:

   $$\frac{\text{Cost to repair}}{\text{Market value of the building}} \geq 50 \text{ percent}$$

2. What is the basic rule on calculating the cost of the damage?

   Substantial damage is determined regardless of the actual cost to the owner. You must figure the true cost of bringing the building back to its pre-damage condition using qualified labor and materials obtained at market prices.

3. A tornado swept through town and substantially damaged 25 buildings in the floodplain. How can you help the property owners comply with the floodplain ordinance's substantial damage regulations?

   Help the owner obtain financial assistance. Many programs are available after a disaster declaration.

4. Mr. Johnson prepared a list of everything he has to do to repair his flooded home. Which of the following items are counted toward the cost of repairs when determining substantial damage? What is the dollar amount that should be counted?

   — Clearing broken trees and debris away from the house ($2,500) *$0*

   — Replacing the warped flooring ($3,000) *$3,000*

   — New doors ($1,000) to replace old ones (worth $500) *$1,000*

   — Replacing the old kitchen cabinets (valued at $5,000) with custom hardwood cabinets valued at $15,000. *$15,000*

   — New wall to wall carpeting ($1,800) *$1,800*

   — New furniture ($12,000) *$0 (not part of the structure)*

   — New wiring ($2,000) to bring the building up to current code (This is a standard requirement of the community. The building was not cited as having a code violation.) *$2,000*

   — Permit fee ($500) *$0*

   — Clean out and test the furnace (done free as a public service by the utility company, but otherwise worth $250 if done by a private contractor) *$250*

   — New bushes and replacement fence ($1,500) *$0 (not part of the structure)*

5. What's the best way to determine if a building is "historic" and eligible for exemption from the substantial improvement requirement?

   See if it's on an approved list of historic structures (see Figure 7-13)

Unit Learning Exercise

1. What kind of projects need a permit so you can check to see if they would be substantial improvements?

   — *Remodeling projects.*

   — *Rehabilitation projects.*

   — *Building additions.*

2. A home was built to post-FIRM standards in 1990. The lowest floor was elevated four feet above grade, to the BFE in effect at that time. In 1995, a new FIRM went into effect. The new BFE is now six feet above grade at that site.

   a. How high would a small (less than substantial) addition have to be elevated?

      To at least four feet above grade.

   b. How high would a large (substantial) addition have to be elevated?

      To at least six feet above grade.

3. Mrs. Murphy bought her property for $100,000 last year. Is this a good basis for determining its market value?

   It's a start, but the true market value may be different this year, depending on the local housing market. You also need to subtract the value of the land, landscaping, and detached structures that would have been in the purchase price for the property.

4. Based on tax assessor's records, the market value of 123 Main Street is $75,000. The owner wants to replace the HVAC and plumbing, remodel the kitchen and both bathrooms and convert his basement to a finished family room. His total cost is $20,000 for supplies. If a contractor were to do the job, the total cost would be $45,000. However, since he is a handyman and will do all the work himself, the total cost of his project is $20,000. What is your response?

   The total cost of the project must be the true cost, including the cost of labor and donated materials. This project will be a substantial improvement.

5. Mrs. Smith wants a new second story that will double the size and value of her house. The floor of the new story will be above the BFE. Will the old first floor have to be elevated?

   Yes. The project should be a substantial improvement and the entire building will need to be elevated in this situation.

6. The substantial damage regulations only apply if the building was damaged by a flood. True or false?

   False, the damage can be from any cause.

7. A flooded property owner has a brother who is a plumbing contractor. His brother's repair estimate shows the damage at 48% of the building's value. You think it should be higher. What can you do to prevent an argument over who's numbers are right?

   Get the cost to repair from an objective third-party or undebatable source, such as:

   — *A licensed general contractor.*

   — *A professional construction estimator.*

   — *Insurance adjustment papers (exclude damage to contents).*

   — *Damage assessment field surveys conducted by building inspection, emergency management or tax assessment agencies after a disaster.*

8. Mrs. McGillicudy is on a fixed income. Her home was flooded and substantially damaged. Her flood insurance policy will pay for the repairs. When told that she will also have to elevate her house, she thinks she should apply for a variance due to the financial hardship. What do you tell her?

   Her flood insurance policy has Increased Cost of Compliance coverage that will help pay for the cost of meeting the ordinance's requirement to elevate. Your office may be able to help her find financial assistance to pay for the rest of the cost, if needed.

9. Before the flood, Mr. Johnson had been cited by the community for a code violation. The paint on his garage door had been peeling, which was a violation of the local housing maintenance code. Since the flood left mud up to the high water line, he decided to repaint the whole house. Can he claim exemption of the cost of the painting because it had been cited as a code violation?

   No. Only exempt the items specifically required by the citation and what is minimally necessary to comply.

You are now only two short units from finishing this course. If you think you will be ready in a week, call now for the final examination to be mailed to you.